UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,137	08/01/2003	Mohammad Athar Shah	199-0201US	3128

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ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/633,137	SHAH ET AL.
	Examiner	**Art Unit**	
	Andy S. Rao	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>8/20/07</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6,9-24,26,29-34,36,39 and 40* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,6,9-24,26,29-34,39 and 40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application
6)☐ Other: _____ .

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claims 1-4, 6, 9-24, 26, 29-34, 36, 39-40 as filed on

8/20/07 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   Claims 1-4, 6, 9-24, 26, 29-34, 36, 39-40 are rejected under 35 U.S.C. 102(a) as being

unpatentable over Chiu et al., (hereinafter referred to as "Chiu") in view of Divakaran et al.,

(hereinafter referred to as "Divakaran").

Chiu disclose a method implementable on an encoder for adjusting a coding threshold for

encoding a block in an image, wherein the coding threshold determines whether the block should

be coded (Chiu: figure 3), comprising: encoding, at a first time, a first image representation of

the block (Chiu: column 7, lines 10-20); encoding, at a second time later than the first time, a

second image representation of the block (Chiu: column 7, lines 40-50); assessing the first and

second blocks to determine whether the image is likely stationary (Chiu: column 9, lines 1-15),

(Chiu: column 9, lines 50-60); and if the image is likely stationary, adjusting the coding

threshold in the encoder for at least a portion of the block (Chiu: column 8, lines 40-55), as in

claim 1. However, Chiu fails to disclose encoding using first and second encoding parameters

and that the first and second parameters are quantization parameters, as in the claim. Divakaran discloses a method of feature extraction for compressed video sequence parameters such as quantization parameters (Divakaran: column 5, lines 15-25) for more efficient scene change processing at the encoder side (Divakaran: column 15, lines 30-57). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the Divakaran compressed video sequence parameter extraction into the Chiu method in order to accurately adjust the coding thresholds in accordance with detected scene changes. The Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, has all of the features of claim 1.

Regarding claim 2, the Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, discloses wherein the first and second image representations comprise a matrix of quantized discrete cosine transform coefficients (Divakaran: column 14, lines 35-60), as in the claim.

Regarding claim 3, the Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, discloses and second encoding parameters respectively comprise at least first and second motion vectors (Divakaran: column 5, lines 15-25), as in the claim.

Regarding claim 4, the Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, discloses wherein assessing to determine whether the image is likely stationary comprises determining whether the first and second motion vectors are substantially zero (Chiu: column 3, lines 50-65), as in the claim.

Regarding claim 6, the Chiu method, now modified with the incorporation of the

Divakaran compressed video sequence parameter extraction, discloses wherein assessing to

determine whether the image is likely stationary comprises determining whether the first and

second quantization parameters are respectively below first and second quantization parameter

thresholds (Chiu: column 9, lines 50-60; column 10, lines 1-10), as in the claim.

Regarding claim 9, the Chiu method, now modified with the incorporation of the

Divakaran compressed video sequence parameter extraction, discloses wherein adjusting the

coding threshold comprises adjusting the coding threshold to decrease the likelihood of encoding

the block at the second time (Chiu: column 9, lines 1-10), as in the claim.

Regarding claim 10, the Chiu method, now modified with the incorporation of the

Divakaran compressed video sequence parameter extraction, discloses wherein adjusting the

coding threshold comprises increasing the coding threshold (Chiu: column 6, lines 25-42), as in

the claim.

Regarding claim 11, the Chiu method, now modified with the incorporation of the

Divakaran compressed video sequence parameter extraction, discloses further comprising:

encoding, a third time prior to the first time, a third image representation of the block using third

encoding parameters generated by the encoder; and assessing at least the first, second, and third

encoding parameters to determine whether the image is likely stationary (Chiu: column 10, lines

10-20), as in the claim.

Regarding claim 12, the Chiu method, now modified with the incorporation of the

Divakaran compressed video sequence parameter extraction, discloses wherein the first and

second encoding parameters respectively comprise whether the first and second image

representations of the block are intercoded, and wherein assessing the first and second encoding

parameters comprises an assessment whether the first and second image representations of the

block are intercoded (Chiu: column 9, lines 1-15), as in the claim.

Chiu discloses a method implementable on an encoder for adjusting a coding threshold

for encoding a block in an image, wherein the coding threshold determines whether the block

should be coded (Chiu: figure 3), comprising: encoding, at a first time, a first image

representation of the block based on a first parameter of the block (Chiu: column 7, lines 25-30);

encoding, at a second time later than the first time, a second image representation of the block

based on a second parameter of the block (Chiu: column 7, lines 25-30); and adjusting the coding

threshold in the encoder for at least a portion of the block in accordance with the parameters

(Chiu: column 8, lines 40-55), as in claim 13. However, Chiu fails to disclose encoding using a

first motion vector and a second motion vector and first and second encoding parameters and that

the first and second parameters are quantization parameters, as in the claim. Divakaran discloses

a method of feature extraction for compressed video sequence parameters such as motion vectors

and quantization parameters (Divakaran: column 5, lines 15-25) for more efficient scene change

processing at the encoder side (Divakaran: column 15, lines 30-57). Accordingly, given this

teaching, it would have been obvious for one of ordinary skill in the art at the time of the

invention to incorporate the Divakaran compressed video sequence parameter extraction into the

Chiu method in order to accurately adjust the coding thresholds in accordance with detected

scene changes. The Chiu method, now modified with the incorporation of the Divakaran

compressed video sequence parameter extraction, has all of the features of claim 13.

Regarding claim 14, the Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, discloses wherein the first and second image representations comprise a matrix of quantized discrete cosine transform coefficients (Divakaran: column 14, lines 35-60), as in the claim.

Regarding claim 15, the Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, discloses wherein the first and second quantization parameters are the same (Chiu: column 9, lines 50-60), as in the claim.

Regarding claim 16, the Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, discloses wherein adjusting the coding threshold comprises adjusting the coding threshold to decrease the likelihood of encoding the block at the second time (Chiu: column 9, lines 1-10), as in the claim.

Regarding claim 17, the Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, discloses wherein adjusting the coding threshold comprises increasing the coding threshold (Chiu: column 6, lines 25-42), as in the claim.

Regarding claims 18-19, the Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, discloses further comprising: encoding, a third time prior to the first time, a third image representation of the block using third encoding parameters generated by the encoder; and adjusting the coding threshold in the encoder (Chiu: column 10, lines 10-20), as in the claim.

Regarding claim 20, the Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, discloses encoding, at the first time,

the first image representation of the block using intercoding (Chiu: column 9, lines 5-10);

encoding, at the second time, the second image representation of the block using intercoding

(Chiu: column 10, lines 1-10); and adjusting the coding threshold in the encoder for at least a

portion of the block if the first and second image representations are intercoded (Chiu: column 8,

lines 40-55), as in the claim.

Chiu disclose a method implementable on an encoder for adjusting a coding threshold for

encoding a block in an image, wherein the coding threshold determines whether the block should

be coded (Chiu: figure 3), comprising: encoding, at a first time, a first image representation of

the block (Chiu: column 7, lines 10-20); encoding, at a second time later than the first time, a

second image representation of the block (Chiu: column 7, lines 40-50); assessing the first and

second blocks to determine whether the image is likely stationary (Chiu: column 9, lines 1-15),

(Chiu: column 9, lines 50-60); and if the image is likely stationary, adjusting the coding

threshold in the encoder for at least a portion of the block (Chiu: column 8, lines 40-55), and if

the image is likely stationary, not updating at least a portion of the block on the display (Chiu:

column 8, lines 60-65), as in claim 21. However, Chiu fails to disclose encoding using first and

second encoding parameters and that the first and second parameters are quantization

parameters, as in the claim. Divakaran discloses a method of feature extraction for compressed

video sequence parameters such as quantization parameters (Divakaran: column 5, lines 15-25)

for more efficient scene change processing at the encoder side (Divakaran: column 15, lines 30-

57). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the

art at the time of the invention to incorporate the Divakaran compressed video sequence

parameter extraction into the Chiu method in order to accurately adjust the coding thresholds in

accordance with detected scene changes. The Chiu method, now modified with the incorporation

of the Divakaran compressed video sequence parameter extraction, has all of the features of

claim 21.

Regarding claim 22, the Chiu method, now modified with the incorporation of the

Divakaran compressed video sequence parameter extraction, discloses wherein the first and

second image representations comprise a matrix of quantized discrete cosine transform

coefficients (Divakaran: column 14, lines 35-60), as in the claim.

Regarding claim 23, the Chiu method, now modified with the incorporation of the

Divakaran compressed video sequence parameter extraction, has first and second encoding

parameters respectively comprise at least first and second motion vectors (Divakaran: column 5,

lines 15-25), as in the claim.

Regarding claim 24, the Chiu method, now modified with the incorporation of the

Divakaran compressed video sequence parameter extraction, has wherein assessing to determine

whether the image is likely stationary comprises determining whether the first and second

motion vectors are substantially zero (Chiu: column 3, lines 50-65), as in the claim.

Regarding claim 26, the Chiu method, now modified with the incorporation of the

Divakaran compressed video sequence parameter extraction, has wherein assessing to determine

whether the image is likely stationary comprises determining whether the first and second

quantization parameters are respectively below first and second quantization parameter

thresholds (Chiu: column 9, lines 50-60; column 10, lines 1-10), as in the claim.

Regarding claim 29, the Chiu method, now modified with the incorporation of the

Divakaran compressed video sequence parameter extraction, has further comprising: receiving

from the encoder (Chiu: 9, lines 35-45), a third time prior to the first time, a third image

representation of the block using third encoding parameters generated by the encoder; and

assessing at least the first, second, and third encoding parameters to determine whether the image

is likely stationary (Chiu: column 10, lines 10-20), as in the claim.

Regarding claim 30, the Chiu method, now modified with the incorporation of the

Divakaran compressed video sequence parameter extraction, has wherein the first and second

encoding parameters respectively comprise whether the first and second image representations of

the block are intercoded, and wherein assessing the first and second encoding parameters

comprises an assessment whether the first and second image representations of the block are

interceded (Chiu: column 9, lines 1-15), as in the claim.

Chiu discloses a method (Chiu: figure 3) implementable on an encoder capable of

transmitting image information to a decoder (Chiu: column 9, lines 35-45), comprising:

encoding, at a first time, a first image representation of the block using first encoding parameters

(Chiu: column 7, lines 10-20); encoding, at a second time later than the first time, a second

image representation of the block using second encoding parameters (Chiu: column 7, lines 40-

50); assessing at least the first and second encoding parameters to determine whether the image

is likely stationary (Chiu: column 9, lines 1-15), and if the image is likely stationary, sending a

no code signal to a decoder for at least a portion of the of the block (Chiu: column 8, lines 40-

55), as in claim 31. However, Chiu fails to disclose encoding using first and second encoding

parameters and that the first and second parameters are quantization parameters, as in the claim.

Divakaran discloses a method of feature extraction for compressed video sequence parameters

such as quantization parameters (Divakaran: column 5, lines 15-25) for more efficient scene

change processing at the encoder side (Divakaran: column 15, lines 30-57). Accordingly, given this teaching, it would have been obvious for one of ordinary skill in the art at the time of the invention to incorporate the Divakaran compressed video sequence parameter extraction into the Chiu method in order to accurately adjust the coding thresholds in accordance with detected scene changes. The Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, has all of the features of claim 31.

·Regarding claim 32, the Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, discloses wherein the first and second image representations comprise a matrix of quantized discrete cosine transform coefficients (Divakaran: column 14, lines 35-60), as in the claim.

Regarding claim 33, the Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, discloses and second encoding parameters respectively comprise at least first and second motion vectors (Divakaran: column 5, lines 15-25), as in the claim.

Regarding claim 34, the Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, discloses wherein assessing to determine whether the image is likely stationary comprises determining whether the first and second motion vectors are substantially zero (Chiu: column 3, lines 50-65), as in the claim.

Regarding claim 36, the Chiu method, now modified with the incorporation of the Divakaran compressed video sequence parameter extraction, discloses wherein assessing to determine whether the image is likely stationary comprises determining whether the first and

second quantization parameters are respectively below first and second quantization parameter

thresholds (Chiu: column 9, lines 50-60; column 10, lines 1-10), as in the claim.

Regarding claim 39, the Chiu method, now modified with the incorporation of the

Divakaran compressed video sequence parameter extraction, discloses wherein adjusting the

coding threshold comprises adjusting the coding threshold to decrease the likelihood of encoding

the block at the second time (Chiu: column 9, lines 1-10), as in the claim.

Regarding claim 40, the Chiu method, now modified with the incorporation of the

Divakaran compressed video sequence parameter extraction, discloses wherein the first and

second encoding parameters respectively comprise whether the first and second image

representations of the block are intercoded, and wherein assessing the first and second encoding

parameters comprises an assessment whether the first and second image representations of the

block are intercoded (Chiu: column 9, lines 1-15), as in the claim.

Conclusion

4.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure. Chang discloses a method and apparatus for reduction of prediction modes in motion

estimation. Lempel discloses a system and method for performing motion estimation in the DCT

domain with improved efficiency.

5.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Andy S. Rao whose telephone number is (571)-272-7337. The

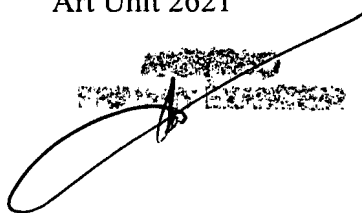examiner can normally be reached on Monday-Friday 8 hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mehrdad Dastouri can be reached on (571)-272-7418. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Andy S. Rao
Primary Examiner
Art Unit 2621

asr
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